What is claimed is:

1. An tailgate lift assist system that may be installed without undue difficulty comprising:

a pair of support members capable of applying upward force to a tailgate; and

a tensioning mechanism connected to said support members to apply tension thereto;

said system being configured so that said tensioning mechanism will increase tension in said support members and thereby increase upward force on the tailgate as the tailgate approaches its fully open position;

said tensioning mechanism being positioned within the tailgate.

2. A tailgate lift assist system in accordance with claim 1 wherein said tensioning mechanism additionally assists in initiating closing of the tailgate.

3. A tailgate lift assist system in accordance with claim 1 wherein said tensioning mechanism comprises a plurality of springs having different spring constants arranged in series.

4. A tailgate lift assist system in accordance with claim 1 wherein said tensioning mechanism transmits tension between said support members to equalize tension in said support members.

5. A tailgate lift assist system in accordance with claim 1 wherein said tensioning mechanism comprises one or more coil springs loaded in tension extending across the tailgate.

6. A tailgate lift assist system in accordance with claim 1 wherein said support members extend into the interior of the tailgate, said system further comprising reinforcing structures mounted on the tailgate to increase the ability of the tailgate to withstand loads and wear associated with said system, and limiters on said support members, each of said limiters comprising a clamp attaching it to one of said support members, and a resilient, energy absorbing bumper to absorb energy upon impact with one of said reinforcing structures.

7. A tailgate lift assist system in accordance with claim 6 wherein said reinforcing structures include rollers for engaging said support members, and wherein each of said bumpers includes an elastomeric material.

8. A tailgate lift assist system in accordance with claim 1 wherein said system applies tension to said support members only through a predetermined range of tailgate angles.

9. A tailgate lift assist system in accordance with claim 1 wherein said system applies tension to said support members at least when the tailgate is at an angle of between 40 and 90 degrees from its closed position.

10. A tailgate lift assist system in accordance with claim 1 wherein said system does not apply significant tension to said support members at least when the tailgate is at an angle of between 0 and 20 degrees from its closed position.

11. A tailgate lift assist system in accordance with claim 1 wherein under static conditions, an upward load of at least 10 lbs. must be applied to the tailgate to initiate upward movement from its fully open position.

12. A tailgate lift assist system in accordance with claim 1 wherein said support members are detachably connected to support members of said pickup truck, and said system does not interfere with removal of the tailgate from the pickup truck after detachment of said support members.

13. A tailgate lift assist system in accordance with claim 1 wherein:

said tensioning mechanism additionally assists in initiating closing of the tailgate;

said tensioning mechanism comprises a plurality of springs having different spring constants arranged in series;

said tensioning mechanism transmits tension between said support members to equalize tension in said support members;

said tensioning mechanism comprises one or more coil springs loaded in tension extending across the tailgate and a noise-reducing sheath at least partially covering said coil springs;

said support members extend into the interior of the tailgate, said system further comprising reinforcing structures mounted on the tailgate to increase the ability of the tailgate to withstand loads and wear associated with said system;

said reinforcing structures include rollers for engaging said support members;

said system applies tension to said support members only through a predetermined range of tailgate angles;

said system applies tension to said support members at least when the tailgate is at an angle of between 40 and 90 degrees from its closed position;

said system does not apply significant tension to said support members at least when the tailgate is at an angle of between 0 and 20 degrees from its closed position.;

under static conditions, an upward load of at least 10 lbs. must be applied to the tailgate to initiate upward movement from its fully open position;

said support members are detachably connected to support members of said pickup truck;

said system does not interfere with removal of the tailgate from the pickup truck after detachment of said support members; and

said system does not change the appearance of the pickup truck when the tailgate is closed.

14. A method of facilitating opening and closing of a pickup truck tailgate having a pair of supports, comprising applying tension to said supports from within the tailgate, and retracting portions of said supports into the interior of said tailgate as said tailgate is pivoted upward, and decreasing tension on said supports and thereby decreasing upward assist as the tailgate is pivoted upward from its fully open position.

15. A method in accordance with claim 14 further comprising applying increasing tension to said supports as the tailgate approaches its fully open position.

16. A method in accordance with claim 14 wherein applying tension to said supports comprises increasing potential energy of an elastic structure.

17. A method in accordance with claim 14 further comprising engaging said supports with rollers adjacent openings in the tailgate.

18. A method in accordance with claim 14 wherein tension is applied to said support members at least when the tailgate is at an angle of between 40 and 90 degrees from its closed position.

19. A method in accordance with claim 14 wherein tension is not applied to said support members at least when the tailgate is at an angle of between 0 and 20 degrees from its closed position.

20. A method in accordance with claim 14 wherein the maximum tension applied to the tailgate is limited so that under static conditions, an upward load of at least 10 lbs. must be applied to the tailgate to initiate upward movement from its fully open position.

21. A pickup truck comprising a pair of structural posts, a tailgate adjacent said structural posts, and a tailgate lift assist system comprising:

support members connected to said structural posts for applying upward force to said tailgate; and

a tensioning mechanism connected to said support members to apply tension thereto;

said system being configured so that said tensioning mechanism will increase tension in said support members and thereby increase upward force on the tailgate as the tailgate approaches its fully open position;

said tensioning mechanism being positioned within the tailgate.

22. A pickup truck tailgate system comprising a pair of structural posts, a tailgate adjacent said structural posts, and a tailgate lift assist system comprising:

a pair of support members capable of applying upward force to a tailgate; and

a tensioning mechanism connected to said support members to apply tension thereto;

said system being configured so that said tensioning mechanism will increase tension in said support members and thereby increase upward force on the tailgate as the tailgate approaches its fully open position;

said tensioning mechanism being positioned within the tailgate.

23. A kit for a tailgate lift assist system comprising: a pair of support members capable of applying upward force to said tailgate; and

a tensioning mechanism capable of being placed within the tailgate, connected to said support members to apply tension thereto;

said system being configured so that said when installed, said tensioning mechanism will increase tension in said support members and thereby increase upward force on the tailgate as the tailgate approaches its fully open position.

24. The kit of claim 23 wherein said support members comprise a pair of cables, said tensioning mechanism comprises at least one resilient member loaded in tension between said cables, and said system further comprises a pair of reinforcing members for withstanding forces applied to the tailgate by said support members, each reinforcing

member comprising a base plate having a pair of aligned mounting openings, and a roller disposed at a non-oblique angle to a line through the centers of said mounting openings.

25. The kit of claim 24 wherein each reinforcing member comprises a V-shaped roller assembly, and each reinforcing member may be used on either end of the tailgate.

26. A method of installing a tailgate lift assist system on a pickup truck having a tailgate located adjacent structural members and connected thereto by support members comprising:

removing a panel from the tailgate;

placing a tensioning mechanism into the interior of the tailgate;

connecting the tensioning mechanism to support members; and

connecting said support members to said structural members; and replacing the panel.

27. The method of claim 26 wherein the tensioning mechanism is connected to the support members without tension on the support members.

28. The method of claim 27 wherein the support members are connected to the structural members without tension on the support members.

29. The method of claim 28 further comprising forming openings in the tailgate, installing means for engaging the support members adjacent said openings, and extending said support members through said openings.

30. The method of claim 29 wherein at least one of connecting the tensioning mechanism to support members and connecting said support members to said structural members takes place with tailgate at an angle of less than about 40 degrees from its closed position.